NAS ALAMEDA BACKGROUND ASSESSMENT MEETING MINUTES

Date: February 26, 1997
Time: 9:00 a.m.
Location: Naval Air Station Alameda

Participants	**Organization**
Teresa Bernhard	EFA West, Alameda
Camille Garibaldi	EFA West, Alameda
Steve Edde	EFA West, Alameda
Henry Gee	EFA West, Alameda
Ann Klimek	EFA West, Alameda
Dr. James Polisini	Department of Toxic Substance Control (DTSC)
Tom Lanphar	DTSC
Dan Murphy	DTSC
David Rist	DTSC
Anna-Marie Cook	U.S. Environmental Protection Agency (EPA)
James Ricks	EPA
Tom Huetteman	EPA
Lyn Suer	Regional Water Quality Control Board (RWQCB)
Theresa Lopez	Terranext, Inc.
Peter Boucher	PRC Environmental Management, Inc.

Steve Edde of the Navy opened the meeting, reviewed the agenda, had the participants introduce themselves, and emphasized the need to move forward with the remedial process.

Theresa Lopez of Terranext, Inc. described how the background data set was developed. The Navy did not collect background samples separately, but took them from the remedial investigation (RI) data set. It was difficult to find on-base locations for collecting background samples. The RI data revealed different soil types across the installation. Three areas with different soil types were identified and described using the Wilcoxon Rank Sum (WRS) statistical test, which does not depend on the distribution of the background data. The areas were also identified through geochemical correlations of various metals normalized against iron (Fe) and manganese (Mn). The area along the Oakland Inner Harbor (OIH) was made part of the pink area based on the assumption that the fill came from the OIH. The three areas are composed of fill and were also based on historical aerial photographs.

Dr. James Polisini of the DTSC inquired how the WRS test was used to distinguish between the different areas and requested more detail about the process. Ms. Lopez described how Mn and Fe were analyzed first to ensure all samples contained relatively consistent concentrations. Then, assuming Fe and Mn are basic soil elements, other metals were correlated with Fe and Mn.

Ms. Lopez described the process of identifying data for the three areas (the three areas were designated by blue, yellow, and pink on a map). Samples were eliminated from sites with 1) previous metals use, 2) history of industrial use of polycyclic aromatic hydrocarbons (PAH), and 3) previous volatile

organic compounds (VOC), polychlorinated biphenyls (PCB), and fuel usage. A list of the remaining samples was listed in Table 1 of the Navy handout. Ms. Lopez went on to explain that not all constituents were analyzed in the blue area. If any boring had samples containing organic chemicals (that were determined not to be laboratory contaminants), no samples from that borehole were used.

Tom Lanphar of the DTSC asked if samples came from petroleum sites in the blue area. Ms. Lopez explained that some samples came from IR sites, usually those IR sites that were mainly petroleum release sites. However, each sample selected was from a borehole with no fuel related organic chemicals in the borehole. Mr. Lanphar requested that this be recorded in the meeting minutes.

Ms. Lopez reviewed a flowchart from the NAS Alameda background methodology document showing the methodology developed for chemical of concern selection based on background. The flowchart describes determining data distribution, identifying geochemical correlations, and statistical hypothesis tests.

Tom Huetteman of the EPA asked how elevated detection limits were addressed. Ms. Lopez said they were included in the data at one-half the detection limit.

Mr. Lanphar asked if the Navy would provide the 80/95 values as an action item. Camille Garibaldi of the Navy responded that the 80/95 values are of interest and will be included in the data screening as a hot spot analysis. Ms. Garibaldi emphasized that she wanted to focus on the data that the Navy was proposing as a background data set.

Mr. Lanphar requested further explanation of the use of hot spot analysis in the risk assessment. Ms. Lopez explained that the Tier 1 background screen of the Environmental Baseline Survey (EBS) tiered screening is the same as a hot spot analysis in the human health risk assessment, comparing the 80/95 of the background data set to the parcel data. She also explained the difference between the 95 percent upper confidence limit (95 UCL) and the 80/95 values.

Mr. Lanphar inquired how the background data set affects the outcome of the statistical tests. Dan Murphy of the DTSC asked at which stage would constituents be eliminated and which would be carried into the risk assessment. Mr. Huetteman explained that the objectives of the hot spot analysis and tests such as the WRS are different. He questioned why the meeting was focused on the ranges of the data (for example, maximum and minimum values) and not the distribution of data, which is critical to selecting statistical tests. Ms. Garibaldi explained the use of both methods and how maintaining the 80/95 or "bright line" method and statistical testing combined provides the most complete data analysis.

Mr. Lanphar stated that the Navy can conduct more background analysis because it can afford it and that the method being used is special, and different from what other parties use that are subject to DTSC regulation. Ms. Bernhard emphasized that the Navy wants to use the best science and reduce errors. Ms. Garibaldi said that the statistical approach is not a new approach and that the EPA recommends using different statistical methods.

Anna-Marie Cook of the EPA asked how different statistical tests may produce different results depending on the data. Mr. Huetteman explained that some statistical tests focus on the highest values (for example, the Gehan test versus the WRS test). Ms. Lopez added that the tests are not interchangeable and, for example, certain tests cannot be run on log-normally distributed data.

Mr. Murphy and Mr. Lanphar discussed the lead data and suggested eliminating the maximum lead (Pb) detection of 752 parts per million (ppm). Ms. Garibaldi was comfortable with elimination of the lead value of 752 ppm in the yellow area as an outlier.

Mr. Lanphar stated for the record that data should be screened against preliminary remediation goals (PRG), and that arsenic (As) and beryllium (Be) often exceed PRG values. He then reviewed data used as background data for sites he selected from around the bay area. He emphasized that the data were assembled using different methods, such as collecting data in the site area (Hercules), and that some focused on certain metals, such as As, Be, and Pb. The averages in the DTSC handout table are the arithmetic mean. The following comments were made regarding the data.

- The I-880 data are from fill material.

- The data from East Bay Hills were from a Resource Conservation and Recovery Act (RCRA) investigation.

- The San Leandro data are from a wetland area and were purposefully collected (As 20.2 ppm, Be 0.81 ppm, Pb 166 ppm).

- North Santa Clara (As 20 ppm, Be 3.2 ppm, Pb 54 ppm).

- Three different soil types were presented for the Presidio.

Mr. Lanphar concluded that the soil As range in the bay area is a maximum of 19-20 ppm, Be is 1.1 to 3.2 ppm, and Pb is up to 220 ppm, but usually less than 100 ppm. Dr. Polisini added that Be background values seem to be around 1.1 ppm (0.9 - 1.3 ppm) at Navy sites. Lyn Suer of the RWQCB added that the Regional Monitoring Program data indicate background levels in marine sediment of 18.2 ppm for As, 50.6 ppm for Pb, and 0.96 ppm for Ag.

Ms. Garibaldi requested the back up data for I-880. Mr. Lanphar agreed to copy and mail the data by Friday, February 28, 1997.

Mr. Lanphar stated that the As maximum concentrations of 33 ppm and 24 ppm observed at NAS Alameda are above what the state has accepted in the past (19-20 ppm).

Ann Klimek of the Navy asked how the DTSC background data presented by Mr. Lanphar would be used. Mr. Lanphar stated that the state's data are from the Bay Area, and that some of the data may

be more significant or applicable than others. NAS Alameda is built on fill, and the state's data will be used to see if NAS Alameda's soil concentrations are elevated above those of the Bay Area.

Mr. Murphy stated that later, when identifying COCs and assessing risks, the risk assessment will evaluate incremental risk above background. Dr. Polisini added that site values would be compared to "ambient" values. Mr. Murphy emphasized that agreement was needed on the background data set, and that would facilitate decision making. Ms. Lopez emphasized that the goal is to first agree on the Navy's proposed data set.

LUNCH 12-1

Mr. Edde opened the afternoon session by explaining that Ms. Lopez was listing the Navy's and the state's background values on a flipchart. (The tables from the flipchart were reproduced and attached to these meeting minutes). Mr. Huetteman emphasized agreement was needed on the Navy's background data set. Ms. Garibaldi added that the statistical methods proposed for the background analysis are final, and that the Navy would be thorough in its evaluation.

Ms. Lopez reviewed and compared the As data to the state's data for the yellow, blue, and pink areas and concluded that the data sets were not very different (see attached tables). Mr. Murphy pointed out the East Bay Hills value for As of 51 ppm. Mr. Huetteman noted that people residing in the East Bay Hills receive a higher As exposure than people that live closer to the bay.

Dr. Polisini asked if there was an As contaminated site at NAS Alameda, and noted that the maximum value of 33 ppm is at about the 99th percentile of the background data set, which indicates there may be no As contaminated sites.

Mr. Murphy stated that the difference between a maximum of 19-24 ppm As and 33 ppm "feels" like the difference between background values and elevated values. He stated that what the Navy was suggesting with regard to As is not consistent with the way his agency has regulated everyone else in the bay area. He indicated a reluctance to change the way the agency has regulated elsewhere.

Lyn Suer proposed eliminating the upper values of 33 and 28 ppm. Camille Garibaldi stated that the Navy cannot eliminate values that are not outliers, and that those are valid samples. She commented on the statement by Dr. Polisini who indicated that there don't appear to be As contaminated sites at the base. Mr. Lanphar said Patrick Lynch has indicated that the Navy brought fill from the hills and that Rich Halket (PRC) said there was a layer of red soil under the roads at NAS Alameda. Mr. Lanphar said this may indicate that the As value of 33 ppm may not be bay fill.

Dr. Polisini asked if the 33 ppm was an outlier and stated that if it wasn't, it couldn't be eliminated. Ms. Lopez stated that it was not an outlier.

Mr. Murphy and Dr. Polisini emphasized that they need the 80/95 value for As. Mr. Murphy added that waiving the 19 ppm As value exceeded his authority.

4

Mr. Huetteman asked why the group was so concerned about As and said it seemed we're micromanaging risk in an unreasonable way. He said the risk as based on the 95 UCL is the issue.

Mr. Murphy indicated agreement with Ms. Garibaldi that the data set seems reasonable but the Navy should present the risk of As for all sites, even when As is screened out.

Ms. Garibaldi indicated the 80/95 issue should be discussed later; a decision should be made on the data set first. Based on the comments of the group, she didn't want to throw out data that could lead to error. She added that she compared the data sets and they were not very different.

Ms. Lopez presented the Be data and the Navy agreed to test the value of 2.3 ppm in the pink area as an outlier. If it was not an outlier, then the Navy would look at the rest of the sample. Mr. Lopez then presented the data for Pb and there was general agreement that the Pb data set was appropriate. The Navy agreed to test the silver (Ag) value of 30 ppm in the yellow area as an outlier.

Mr. Huetteman asked how metals with only 1-2 detects would be addressed. Mr. Lopez said the Navy was hesitant to drop them from the background assessment and assume they were site related. Titanium was only sampled in one area. Such metals will be left in the table but not subject to statistical tests. Antimony, selenium, thallium, titanium, and silver in the blue area will be addressed in the uncertainty section of the risk assessment.

Ms. Suer added that she was concerned about the zinc value of 316 ppm in the blue area and the silver value of 30 ppm in the yellow area.

Ms. Garibaldi started discussion on the PAH background data assembled by the Navy. Dr. Polisini asked how PAH data will be used and whether the PAHs will be carried through and a risk calculated. Ms. Garibaldi responded yes, PAHs will be carried through the risk assessment, and background risk will be compared to site risk for PAHs.

Mr. Lanphar stated he didn't think PAH background should be established for the base. Ms. Garibaldi stated that risk assessment will focus on incremental risk. Mr. Lanphar stated that the frequency of detection of the PAH stated data was too low to be useful in assessing background. Ms. Cook agreed that the frequency of detection was low. Ms. Suer added that the Regional Monitoring Program (RMP) found PAHs in the bay sediments of 300 parts per billion.

Mr. Lanphar stated he was concerned about the blue area which has fuel lines and fuel farms. Ms. Lopez stated that petroleum is associated with a few specific PAH's such as naphthalene or 2-methnapthalene. Ms. Garibaldi stated that the PAHs could be treated like the inorganics with low frequency of detection. Mr. Lanphar did not agree with the Navy's approach on PAHs. He stated that reaching a consensus on how PAH levels were approached was necessary before completing a risk assessment.

Ms. Cook suggested moving forward and looking at the results of the risk assessment. Mr. Lanphar did not agree with the suggestion and reiterated that there was not enough PAH data to estimate background.

Ms. Garibaldi said we should use the PAH ranges from the PG&E report as "background", carry PAHs through the risk assessment, and compare the site-specific ranges and background ranges in the risk management section. She said the Navy must consider all data in the risk management decision and that sites with releases will be obvious.

Ms. Cook asked about the difference between assessing background before conducting the risk assessment versus after. Ms. Garibaldi reiterated that the Navy wants to avoid screening out chemicals at the end of the risk assessment without a scientific explanation.

Teresa Bernhard of the Navy asked what the regulatory agencies concern was regarding the background approach, and whether it was risk communication.

James Ricks of the EPA reminded the group of partnering and said those in the meeting may have to take a risk and go forward based on trust.

Mr. Lanphar reiterated that the DTSC needs the 80/95 values to evaluate the NAS Alameda background data set. Ms. Garibaldi reiterated that the 80/95 values would be provided, but the Navy is confident of the proposed data set. She expressed concern about providing the 80/95 values as a tool to evaluate the appropriateness of the background data set.

Mr. Murphy stated he understood that the Navy wanted agreement on the data but he could not agree.

Ms. Bernhard asked if the agencies could agree with the statement "With the exception of As and Be and PAHs, the agencies agree with data set"? The agencies agreed with the statement.

Ms. Garibaldi stated she had confidence in the procedure, and when the risk assessment was available, risk management decisions would be able to be made realizing that the base was constructed on fill. She stated the Navy's and the DTSC's data sets weren't significantly different, and that the Navy will use the PAH data not to screen contaminants but as comparative data in the risk management process.

Mr. Murphy said he could agree with the statement that "If there is a decision that background can be estimated [for PAHs], the data would not be used to screen out chemicals, but as a point of discussion in the risk management process".

Ms. Bernhard stated the action items from the meeting and agreed to produce a list and fax it to the attendees. The meeting was adjourned by Mr. Edde at approximately 4 p.m.

TETRA TECH EM INC.

TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. **N68711-00-D-0005**   Document Control No. **TC . A021 . 10075**

TO: Mr. Ron Fuller, Code 02R1.RF   DATE: 04/03/03
          Contracting Officer   DO: 021
          Naval Facilities Engineering Command   LOCATION:
          Southwest Division   Alameda Point, Alameda, California
          1230 Columbia Street, Suite 1100
          San Diego, CA 92101-8517

FROM: _Michael Wanta_, Contract Manager

DOCUMENT TITLE AND DATE:

BRAC Cleanup Team After Action Reports from 1990 through 2000 and 2001 through 2002

April 2, 2003

TYPE: ☐   Contractual   ☐   Technical   ☒   Other (TC)
                 Deliverable   Deliverable (DS)

VERSION: NA _____   REVISION #:   NA
                 (e.g., Draft, Draft Final, Final)

ADMIN RECORD: Yes ☒   No ☐   CATEGORY: Confidential ☐

SCHEDULED DELIVERY DATE: NA   ACTUAL DELIVERY DATE: 04/03/03

NUMBER OF COPIES SUBMITTED TO NAVY: O/3C/4E

O = original transmittal form
C = copy of transmittal form
E = enclosure

COPIES TO: (Include Name, Navy Mail Code, and Number of Copies)

NAVY:	TETRA TECH:	OTHER:
M. McClelland (06CAMM)	File/Doc Control	
O/1E	1C/1E (w/QC)	
Diane Silva (05G.DS)*	Courtney Colvin	
3C/3E	1C/1E	

Date/Time Received

*Admin Record Recipient   rev 07/22/02